

Amendments to the Claims:

This listing of claims will replace all prior versions and listings in the application:

Listing of Claims:

Claims 1-9 (canceled)

Claim 10 (previously presented) A mutant of a naturally-occurring second serine/threonine protein kinase or tyrosine protein kinase, said mutant characterized by:

- (a) having an ATP binding site comprising at least one amino acid substitution compared to an ATP binding site of the naturally-occurring second serine/threonine protein kinase or tyrosine protein kinase; and
- (b) having the ability to bind to a compound that binds to an ATP binding site of a first serine/threonine protein kinase or first tyrosine protein kinase, wherein said compound is an inhibitor or a ligand of said first serine/threonine protein kinase or said first tyrosine kinase, said binding of the compound with the mutant having a dissociation constant for said inhibitor (K_i) or a dissociation constant for said ligand (K_d) that is
 - (i) less than 10 μ M and
 - (ii) at least 10-fold lower than the K_i or K_d of the binding of said compound with said naturally-occurring second serine/threonine protein kinase or second tyrosine protein kinase.

Claim 11 (amended) ~~The mutant second protein kinase according to claim 23, wherein said first and said second protein kinases are mitogen activating protein (MAP) kinases.~~

A mutant of a naturally-occurring second mitogen activating protein (MAP) kinase, said mutant characterized by:

(a) having an ATP binding site comprising at least one amino acid substitution compared to an ATP binding site of the naturally-occurring second MAP kinase; and

(b) having the ability to bind to a compound that binds to an ATP binding site of a first MAP kinase, wherein said compound is an inhibitor or a ligand of said first MAP kinase, said binding of the compound with the mutant having a dissociation constant for said inhibitor (K_i) or a dissociation constant for said ligand (K_d) that is

(i) less than 10 μ M and

(ii) at least 10-fold lower than the K_i or K_d of the binding of said compound with said naturally-occurring second MAP kinase.

Claim 12 (previously presented) The mutant second protein kinase according to claim 11, wherein said mutant second protein kinase is selected from:

(a) a mutant extracellular-signal regulated kinase 2 (ERK2) comprising the amino acid sequence of SEQ ID NO:2, wherein amino acid 105 is threonine or alanine; or

(b) a mutant Jun-N-terminal kinase 3 (JNK3) comprising amino acids 40-402 of SEQ ID NO:3, wherein amino acid 146 is threonine or alanine.

Claim 13 (previously presented) The mutant ERK2 according to claim 12, wherein amino acid 103 is leucine, amino acid 106 is histidine, amino acid 109 is glycine and amino acid 110 is alanine.

Claims 14-22 (canceled)

Claim 23 (previously presented) A mutant of a naturally-occurring second serine/threonine protein kinase, said mutant characterized by:

(a) having an ATP binding site comprising at least one amino acid substitution compared to an ATP binding site of the naturally-occurring second serine/threonine protein kinase; and

(b) having the ability to bind to a compound that binds to an ATP binding site of a first serine/threonine protein kinase, wherein said compound is an inhibitor or a ligand of said first serine/threonine protein kinase, said binding of the compound with the mutant having a dissociation constant for said inhibitor (K_i) or a dissociation constant for said ligand (K_d) that is

(i) less than 10 μ M and

(ii) at least 10-fold lower than the K_i or K_d of the binding of said compound with said naturally-occurring second serine/threonine protein kinase.